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NEWS 3	JAN 16	CA/CAplus Company Name Thesaurus enhanced and reloaded
NEWS 4	JAN 16	IPC version 2007.01 thesaurus available on STN
NEWS 5	JAN 16	WPIDS/WPINDEX/WPIX enhanced with IPC 8 reclassification data
NEWS 6	JAN 22	CA/CAplus updated with revised CAS roles
NEWS 7	JAN 22	CA/CAplus enhanced with patent applications from India
NEWS 8	JAN 29	PHAR reloaded with new search and display fields
NEWS 9	JAN 29	CAS Registry Number crossover limit increased to 300,000 in multiple databases
NEWS 10	FEB 15	PATDPASPC enhanced with Drug Approval numbers
NEWS 11	FEB 15	RUSSIAPAT enhanced with pre-1994 records
NEWS 12	FEB 23	KOREAPAT enhanced with IPC 8 features and functionality
NEWS 13	FEB 26	MEDLINE reloaded with enhancements
NEWS 14	FEB 26	EMBASE enhanced with Clinical Trial Number field
NEWS 15	FEB 26	TOXCENTER enhanced with reloaded MEDLINE
NEWS 16	FEB 26	IFICDB/IFIPAT/IFIUDB reloaded with enhancements
NEWS 17	FEB 26	CAS Registry Number crossover limit increased from 10,000 to 300,000 in multiple databases
NEWS 18	MAR 15	WPIDS/WPIX enhanced with new FRAGHITSTR display format
NEWS 19	MAR 16	CASREACT coverage extended
NEWS 20	MAR 20	MARPAT now updated daily
NEWS 21	MAR 22	LWPI reloaded
NEWS 22	MAR 30	RDISCLOSURE reloaded with enhancements
NEWS 23	MAR 30	INPADOCDB will replace INPADOC on STN
NEWS 24	APR 02	JICST-EPLUS removed from database clusters and STN

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FILE 'HOME' ENTERED AT 15:24:02 ON 18 APR 2007

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=> s (alpha(w)melanocyte(w)stimulating(w)hormone or alpha(w)MSH) and
(desacetyl(w)alpha(w)melanocyte(w)stimulating(w)hormone or desacetyl(w)alpha(w)MSH)
L1          227 (ALPHA(W) MELANOCYTE(W) STIMULATING(W) HORMONE OR ALPHA(W) MSH)
                AND (DESACETYL(W) ALPHA(W) MELANOCYTE(W) STIMULATING(W) HORMONE
                OR DESACETYL(W) ALPHA(W) MSH)

=> s l1 and (obesity or energy or feeding or weight)
L2           42 L1 AND (OBESITY OR ENERGY OR FEEDING OR WEIGHT)

=> dup rem l2
PROCESSING COMPLETED FOR L2
L3           16 DUP REM L2 (26 DUPLICATES REMOVED)

=> dis his

     (FILE 'HOME' ENTERED AT 15:24:02 ON 18 APR 2007)

     FILE 'MEDLINE, EMBASE, BIOSIS, CAPLUS' ENTERED AT 15:24:44 ON 18 APR 2007
L1           227 S (ALPHA(W)MELANOCYTE(W)STIMULATING(W)HORMONE OR ALPHA(W)MSH) A
L2            42 S L1 AND (OBESITY OR ENERGY OR FEEDING OR WEIGHT)
L3            16 DUP REM L2 (26 DUPLICATES REMOVED)

=> dis ibib abs l3 1-16

L3   ANSWER 1 OF 16     MEDLINE on STN                    DUPLICATE 1
ACCESSION NUMBER:    2006647548     MEDLINE
DOCUMENT NUMBER:     PubMed ID: 16868223
TITLE:               Peripherally administered desacetyl alpha
                     -MSH and alpha-MSH both
                     influence postnatal rat growth and associated rat
                     hypothalamic protein expression.
AUTHOR:              Wu Chia-Shan Jenny; Greenwood David R; Cooney Janine M;
                     Jensen Dwayne J; Tatnell Michele A; Cooper Garth J S;
                     Mountjoy Kathleen G
CORPORATE SOURCE:    Department of Physiology, University of Auckland, Auckland
                     1023, New Zealand.
SOURCE:              American journal of physiology. Endocrinology and
                     metabolism, (2006 Dec) Vol. 291, No. 6, pp. E1372-80.
                     Electronic Publication: 2006-07-25.
                     Journal code: 100901226. ISSN: 0193-1849.
PUB. COUNTRY:        United States
DOCUMENT TYPE:       Journal; Article; (JOURNAL ARTICLE)
                     (RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE:            English
FILE SEGMENT:        Priority Journals
ENTRY MONTH:         200612
```

ENTRY DATE: Entered STN: 4 Nov 2006
Last Updated on STN: 19 Dec 2006
Entered Medline: 12 Dec 2006

AB Desacetyl alpha-MSH predominates over alpha-MSH during development, but whether it is biologically active and has a physiological role is unclear. We compared the effects of 0.3 microg.g(-1).day(-1) desacetyl alpha -MSH with that of 0.3 microg.g(-1).day(-1) alpha-MSH on postnatal body growth by administering the peptides subcutaneously daily for postnatal days 0-14 and also used a two-dimensional gel electrophoresis gel-based proteomic approach to analyze protein changes in hypothalami, the relay center for body weight and growth regulation, after 14 days of treatment. We found that the growth rate between days 1 and 10 was significantly decreased by desacetyl alpha-MSH but not by alpha-MSH, but by day 14, a time reported for development of a mature pattern of hypothalamic innervation, both peptides had significantly increased neonatal growth compared with PBS-treated control rats. Desacetyl alpha-MSH significantly increased spleen weight, but alpha-MSH had no effect. alpha-MSH significantly decreased kidney weight, but desacetyl alpha -MSH had no effect. Both desacetyl alpha-MSH and alpha-MSH significantly decreased brain weight. By 14 days, both peptides significantly changed expression of a number of hypothalamic proteins, specifically metabolic enzymes, cytoskeleton, signaling, and stress response proteins. We show that peripherally administered desacetyl alpha-MSH is biologically active and induces responses that can differ from those for alpha-MSH. In conclusion, desacetyl alpha-MSH appears to be an important regulator of neonatal rat growth.

L3 ANSWER 2 OF 16 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN

ACCESSION NUMBER: 2006609079 EMBASE
TITLE: Peripherally administered desacetyl .alpha.-MSH and .alpha.-MSH both influence postnatal rat growth and associated rat hypothalamic protein expression.
AUTHOR: Wu C.-S.J.; Greenwood D.R.; Cooney J.M.; Jensen D.J.; Tatnell M.A.; Cooper G.J.S.; Mountjoy K.G.
CORPORATE SOURCE: K.G. Mountjoy, Dept. of Physiology, School of Medical Sciences, University of Auckland, Auckland 1023, New Zealand. kmountjoy@auckland.ac.nz
SOURCE: American Journal of Physiology - Endocrinology and Metabolism, (2006) Vol. 291, No. 6, pp. E1372-E1380. .
Refs: 71
ISSN: 0193-1849 E-ISSN: 1522-1555 CODEN: AJPMD
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 021 Developmental Biology and Teratology
030 Pharmacology
037 Drug Literature Index
LANGUAGE: English
SUMMARY LANGUAGE: English
ENTRY DATE: Entered STN: 12 Jan 2007
Last Updated on STN: 12 Jan 2007

AB Desacetyl .alpha.-MSH predominates over .alpha.-MSH during development, but whether it is biologically active and has a physiological role is unclear. We compared the effects of 0.3 μg.ovrhdot.g(-1).ovrhdot.day(-1) desacetyl .alpha.-MSH with that of 0.3 μg.ovrhdot.g(-1).ovrhdot.day(-1) .alpha.-MSH on postnatal body

growth by administering the peptides subcutaneously daily for postnatal days 0-14 and also used a two-dimensional gel electrophoresis gel-based proteomic approach to analyze protein changes in hypothalami, the relay center for body weight and growth regulation, after 14 days of treatment. We found that the growth rate between days 1 and 10 was significantly decreased by desacetyl .alpha.-MSH but not by .alpha.-MSH, but by day 14, a time reported for development of a mature pattern of hypothalamic innervation, both peptides had significantly increased neonatal growth compared with PBS-treated control rats. Desacetyl .alpha.-MSH significantly increased spleen weight , but .alpha.-MSH had no effect. .alpha.-MSH significantly decreased kidney weight, but desacetyl .alpha.-MSH had no effect. Both desacetyl .alpha.-MSH and .alpha.-MSH significantly decreased brain weight. By 14 days, both peptides significantly changed expression of a number of hypothalamic proteins, specifically metabolic enzymes, cytoskeleton, signaling, and stress response proteins. We show that peripherally administered desacetyl .alpha.-MSH is biologically active and induces responses that can differ from those for .alpha.-MSH. In conclusion, desacetyl .alpha.-MSH appears to be an important regulator of neonatal rat growth.

L3 ANSWER 3 OF 16 MEDLINE on STN DUPLICATE 2

ACCESSION NUMBER: 2004012769 MEDLINE
DOCUMENT NUMBER: PubMed ID: 14709157
TITLE: Agouti-related protein (83-132) is a competitive antagonist at the human melanocortin-4 receptor: no evidence for differential interactions with pro-opiomelanocortin-derived ligands.
AUTHOR: Pritchard L E; Armstrong D; Davies N; Oliver R L; Schmitz C A; Brennand J C; Wilkinson G F; White A
CORPORATE SOURCE: School of Biological Sciences, University of Manchester, Stopford Building, Manchester M13 9PT, UK.
SOURCE: The Journal of endocrinology, (2004 Jan) Vol. 180, No. 1, pp. 183-91.
Journal code: 0375363. ISSN: 0022-0795.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200403
ENTRY DATE: Entered STN: 8 Jan 2004
Last Updated on STN: 11 Mar 2004
Entered Medline: 10 Mar 2004

AB Interactions between pro-opiomelanocortin (POMC)-derived peptides, agouti-related protein (AGRP) and the melanocortin-4 receptor (MC4-R) are central to energy homeostasis. In this study we have undertaken comprehensive pharmacological analysis of these interactions using a CHOK1 cell line stably transfected with human MC4-R. Our main objectives were (1) to compare the relative affinities and potencies of POMC-derived peptides endogenously secreted within the hypothalamus, (2) to investigate the potency of AGRP(83-132) antagonism with respect to each POMC-derived peptide and (3) to determine whether AGRP(83-132) and POMC-derived peptides act allosterically or orthosterically. We have found that beta melanocyte-stimulating hormone (betaMSH), desacetyl alpha MSH (da-alphaMSH) and adrenocorticotrophic hormone all have very similar affinities and potencies at the MC4-R compared with the presumed natural ligand, alphaMSH. Moreover, even MSH precursors, such as beta lipotrophic hormone, showed significant binding and functional activity. Therefore, many POMC-derived peptides could have

important roles in appetite regulation and it seems unlikely that alphaMSH is the sole physiological ligand. We have shown that AGRP(83-132) acts as a competitive antagonist. There was no significant difference in the potency of inhibition by AGRP(83-132) or agouti(87-132) at the MC4-R, regardless of which POMC peptide was used as an agonist. Furthermore, we have found that AGRP(83-132) has no effect on the dissociation kinetics of radiolabelled Nle4,D-Phe7 MSH from the MC4-R, indicating an absence of allosteric effects. This provides strong pharmacological evidence that AGRP(83-132) acts orthosterically at the MC4-R to inhibit Gs-coupled accumulation of intracellular cAMP.

L3 ANSWER 4 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:991752 CAPLUS
DOCUMENT NUMBER: 140:36380
TITLE: Measurement of melanocortin peptides and uses thereof in diagnosing risk of obesity and energy imbalance
INVENTOR(S): Mountjoy, Kathleen Grace; Chia-Shan, Jenny Wu
PATENT ASSIGNEE(S): Auckland Uniservices Limited, N. Z.
SOURCE: PCT Int. Appl., 72 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003104761	A2	20031218	WO 2003-IB2641	20030611
WO 2003104761	A3	20040129		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2489117	A1	20031218	CA 2003-2489117	20030611
AU 2003273711	A1	20031222	AU 2003-273711	20030611
US 2005250215	A1	20051110	US 2005-517684	20050606
PRIORITY APPLN. INFO.:			NZ 2002-519504 A	20020611
			AU 2002-951020 A	20020823
			WO 2003-IB2641 W	20030611

AB The present invention relates to melanocortin peptides and to methods that utilize melanocortin peptides, their measurement, their receptors and biol. response systems for the risk assessment and diagnosis of disease. The biol. response systems are also utilized to screen for compds. that act as agonists or antagonists of melanocortin receptors. Methods for assessing feeding and/or wt. gain pattern, for predicting risk of obesity, or for diagnosing imbalance in energy homeostasis in a subject by measuring a melanocortin peptide in a sample obtained from said subject are claimed.

L3 ANSWER 5 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:472968 CAPLUS
DOCUMENT NUMBER: 139:47578
TITLE: Methods and reagents for using mammalian melanocortin receptor antagonists to treat cachexia
INVENTOR(S): Marks, Daniel L.; Cone, Roger D.
PATENT ASSIGNEE(S): Oregon Health and Sciences University, USA
SOURCE: U.S. Pat. Appl. Publ., 37 pp.

CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003113263	A1	20030619	US 2002-74754	20020213
PRIORITY APPLN. INFO.:			US 2001-268357P P	20010213

AB The present invention provides recombinant expression constructs comprising nucleic acid encoding mammalian melanocortin receptors, in particular MC-4 melanocortin receptor, and mammalian cells into which said recombinant expression constructs have been introduced that express functional mammalian MC-4 melanocortin receptors. The invention particularly provides such genetically engineered cells expressing the human MC-4R melanocortin receptor for screening compds. for receptor agonist and antagonist activity. The invention also provides screening methods using genetically engineered cells expressing the human MC-4 melanocortin receptor to specifically detect and identify agonists and antagonists for this melanocortin receptor. Such screening methods are provided identifying compds. with MC-4 melanocortin receptor antagonist activity having the capacity to influence or modify metabolism and feeding behavior, particularly pathol. feeding behavior such as illness-induced cachexia.

L3 ANSWER 6 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:343961 CAPLUS
DOCUMENT NUMBER: 139:191748
TITLE: β-MSH: a functional ligand that regulated energy homeostasis via hypothalamic MC4-R?
AUTHOR(S): Harrold, Joanne A.; Widdowson, Peter S.; Williams, Gareth
CORPORATE SOURCE: Department of Medicine, Neuroendocrinology and Obesity Biology Unit, Diabetes and Endocrinology Research Group, University of Liverpool, Liverpool,. L69 3GA, UK
SOURCE: Peptides (New York, NY, United States) (2003), 24(3), 397-405
CODEN: PPTDD5; ISSN: 0196-9781
PUBLISHER: Elsevier Science Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB .alpha.-MSH has generally been assumed to be the endogenous ligand acting at the melanocortin-4 receptor (MC4-R), activation of which in the hypothalamus leads to reduced feeding . However, β-MSH is also capable of activating MC4-R and inhibiting feeding. Here, the authors investigated the possibility that β-MSH acts as an endogenous MC4-R agonist and that this melanocortin peptide plays a role in the regulation of feeding and energy balance. The authors found that β-MSH had significantly higher affinities than .alpha.-MSH at both human MC4-R transfected into CHO cells (Ki: β-MSH, 11.4±0.4 nmol/l vs. .alpha.-MSH, 324±16 nmol/l, P<0.001) and MC4-R in rat hypothalamic homogenates (Ki: β-MSH, 5.0±0.4 nmol/l vs. .alpha.-MSH, 22.5±2.3 nmol/l, P<0.001). Incubation of brain slices with 5 μM β-MSH significantly increased [35S]GTPγS binding by 140-160% (P<0.001), indicating activation of G-protein-coupled receptors (GPCRs), in the hypothalamic ventromedial (VMH), dorsomedial (DMH), arcuate (ARC) and paraventricular (PVN) nuclei. These sites match the distribution of β-MSH immunoreactive fibers and also the distribution of MC4-R binding sites which the authors and others previously reported. Food-restriction significantly increased β-MSH levels in the VMH, DMH and ARC (all P<0.05) above freely-fed controls, while .alpha.-MSH concns. were unchanged. The authors

propose that increased β-MSH concns. reflect blockade of the peptide's release in these sites, consistent with the increased hunger and the known up-regulation of MC4-R in the same nuclei. Thus, the authors conclude that β-MSH has higher affinity at MC4-R than . alpha .-MSH; β-MSH activates GPCR in these sites, which are rich in MC4-R; and β-MSH is present in hypothalamic nuclei that regulate feeding and its concns. alter with nutritional state. The authors suggest that β-MSH rather than . alpha.-MSH is the key ligand at the MC4-R populations that regulate feeding, and that inhibition of tonic release of β-MSH is one mechanism contributing to hunger in under-feeding.

REFERENCE COUNT: 45 THERE ARE 45 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 7 OF 16 MEDLINE on STN DUPLICATE 3
ACCESSION NUMBER: 2002484518 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12270786
TITLE: Relationships between obesity and metabolic hormones in the "cobalt" variant of rainbow trout.
AUTHOR: Yada Takashi; Moriyama Shunsuke; Suzuki Yoshiro; Azuma Teruo; Takahashi Akiyoshi; Hirose Shigehisa; Naito Nobuko
CORPORATE SOURCE: Nikko Branch, National Research Institute of Aquaculture, 2482-3 Chugushi, Nikko, Tochigi 321-1661, Japan.. yadat@fra.affrc.go.jp
SOURCE: General and comparative endocrinology, (2002 Aug) Vol. 128, No. 1, pp. 36-43.
Journal code: 0370735. ISSN: 0016-6480.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200303
ENTRY DATE: Entered STN: 25 Sep 2002
Last Updated on STN: 4 Mar 2003
Entered Medline: 3 Mar 2003

AB The "cobalt" variant of rainbow trout (Oncorhynchus mykiss) lacks most of the pars intermedia of the pituitary, and shows significant obesity with an enlarged liver and a fat accumulation in the abdominal cavity. Plasma levels of growth hormone, prolactin, and somatolactin were significantly lower in the cobalt variant than those in the normal trout. In contrast, plasma insulin level was four times higher than that in the normal. Plasma levels of total protein, free cholesterol, and triacylglycerol were higher in the cobalt, while those of glucose and fatty acids were not different from the normal levels. In the white muscle, red muscle, liver, and mesenteric fat, the cobalt showed higher contents of triacylglycerol than the normal fish. There was no significant difference in tissue contents of phosphatidylcholine between the two groups of the trout, except for that in the mesenteric fat, exhibiting significantly lower content than in the normal fish. Activity of triacylglycerol lipase in the liver in vivo was lower in the cobalt than that in the normal trout, while there was no significant difference between the two in the cultured liver slices. Desacetyl-alpha-MSH stimulated lipolysis of triacylglycerol similarly in the cultured liver slices from the normal trout and from the cobalt variant. Results from this study suggest that the lack of pars intermedia and the increased plasma level of insulin are involved in a depression of lipid mobilization and obesity in this variant of rainbow trout.

L3 ANSWER 8 OF 16 EMBASE on STN DUPLICATE 4
ACCESSION NUMBER: 2001148457 EMBASE
TITLE: The melanocortin melanocyte-stimulating

hormone/adrenocorticotropin(4-10) decreases body fat in humans.

AUTHOR: Fehm H.L.; Smolnik R.; Kern W.; McGregor G.P.; Bickel U.; Born J.

CORPORATE SOURCE: Dr. J. Born, Clinical Neuroendocrinology, Haus 23, Ratzeburger Allee 160, 23538 Lubeck, Germany. born@kfg.mu-luebeck.de

SOURCE: Journal of Clinical Endocrinology and Metabolism, (2001) Vol. 86, No. 3, pp. 1144-1148. .
Refs: 43
ISSN: 0021-972X CODEN: JCEMAZ

COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 003 Endocrinology
LANGUAGE: English
SUMMARY LANGUAGE: English
ENTRY DATE: Entered STN: 3 May 2001
Last Updated on STN: 3 May 2001

AB The control of body fat is a prominent factor in human health. Animal studies have indicated a homeostatic central nervous system regulation of body fat with particular involvement of the melanocortin receptor pathway. This study provides evidence for a similar role for melanocortins in the long-term control of fat stores in humans. Thirty-six normal weight humans were assigned to one of three experimental groups. After a 4-week baseline, one group was treated with MSH/ACTH(4-10) (MSH/ACTH(4-10)) representing the core sequence of all melanocortins. Another group received desacetyl-.alpha.MSH, a selective agonist of the brain melanocortin-4 receptor, which shares the 4-10 sequence with MSH/ACTH(4-10). The third group received placebo. Treatments were given intranasally twice daily for 6 weeks, at equimolar doses (MSH/ACTH(4-10), 0.5 mg; desacetyl-.alpha. MSH, 0.84 mg). Body weight, body composition, and plasma hormone concentrations were measured before and after treatment. MSH/ACTH(4-10) reduced body fat, on the average, by 1.68 kg ($P < 0.05$) and body weight by 0.79 kg ($P < 0.001$). Concurrently, plasma leptin levels were decreased by 24% ($P < 0.02$), and insulin levels were decreased by 20% ($P < 0.05$) after MSH/ACTH(4-10). Changes after desacetyl -.alpha.MSH remained nonsignificant. The finding of reduced body adiposity after MSH/ACTH(4-10) confirms and extends to the human the findings of animal models indicating an essential role of the hypothalamic melanocortin system in body weight control.

L3 ANSWER 9 OF 16 MEDLINE on STN DUPLICATE 5

ACCESSION NUMBER: 2001692697 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11738258

TITLE: Differential effects of alpha-, beta- and gamma(2)-melanocyte-stimulating hormones on hypothalamic neuronal activation and feeding in the fasted rat.

AUTHOR: Millington G W; Tung Y C; Hewson A K; O'Rahilly S; Dickson S L

CORPORATE SOURCE: Department of Physiology, University of Cambridge, UK.

SOURCE: Neuroscience, (2001) Vol. 108, No. 3, pp. 437-45.
Journal code: 7605074. ISSN: 0306-4522.

PUB. COUNTRY: United States
DOCUMENT TYPE: (COMPARATIVE STUDY)
Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200203
ENTRY DATE: Entered STN: 13 Dec 2001
Last Updated on STN: 7 Mar 2002
Entered Medline: 5 Mar 2002

AB Hypothalamic pro-opiomelanocortin neurones have an established role in the control of feeding. While pro-opiomelanocortin is the precursor for at least three melanocortin peptides, alpha-, beta- and gamma-melanocyte-stimulating hormone (MSH), it has been widely assumed that alpha-MSH is the predominant ligand involved. We compared the effects of centrally administered alpha-, beta- and gamma(2)-MSH on hypothalamic neuronal activation and on food intake in rats fasted for 48 h. Significant reductions in food intake were seen with alpha-MSH (first hour) and gamma(2)-MSH (second hour) but not with beta-MSH. The pattern of neuronal activation, assessed by the detection of early growth response factor-1 protein, showed considerable overlap; all three melanocortins activated cells in the arcuate, ventromedial, paraventricular, periventricular and supraoptic nuclei, as well as the preoptic area. alpha-MSH and beta-MSH produced activation in the dorsomedial nuclei while gamma(2)-MSH was only weakly active here. Retrograde labelling by systemic Fluorogold injection revealed that many cells activated by MSH compounds in the arcuate, paraventricular, periventricular and supraoptic nuclei (but not dorsomedial or ventromedial) project outside the blood-brain barrier and are therefore likely to include neuroendocrine cells. Desacetyl -alpha-MSH, which has previously been reported to lack effects on feeding, produced no discernible neuronal activation in the hypothalamus.Our finding that both the pattern of neuronal activation and the distribution of neuroendocrine cells activated in response to these closely related peptides show only partial overlap suggests that, in addition to common pathways, there may exist distinct hypothalamic circuits activated by different pro-opiomelanocortin products. The slower time course of gamma(2)-MSH- versus alpha-MSH-induced suppression of feeding provides further support for the notion that the biological responses to individual melanocortin peptides may involve distinct neuronal mechanisms.

L3 ANSWER 10 OF 16 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN DUPLICATE 6

ACCESSION NUMBER: 2001:71658 BIOSIS
DOCUMENT NUMBER: PREV200100071658
TITLE: Effects of desacetyl-alpha-MSH on lipid mobilization in the rainbow trout, Oncorhynchus mykiss.
AUTHOR(S): Yada, Takashi [Reprint author]; Azuma, Teruo; Takahashi, Akiyoshi; Suzuki, Yoshiro; Hirose, Shigehisa
CORPORATE SOURCE: Nikko Branch, National Research Institute of Aquaculture, Nikko, Tochigi, 321-1661, Japan
yadat@nria.affrc.go.jp
SOURCE: Zoological Science (Tokyo), (November, 2000) Vol. 17, No. 8, pp. 1123-1127. print.
CODEN: ZOSCEX. ISSN: 0289-0003.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 7 Feb 2001
Last Updated on STN: 12 Feb 2002

AB Effects of melanocyte-stimulating hormone (MSH) and beta-endorphin on lipid mobilization were examined in the rainbow trout (Oncorhynchus mykiss). Plasma levels of fatty acid (FA) were measured after intra-arterial administration of alpha-MSH, desacetyl-alpha-MSH, beta-MSH, or beta-endorphin through a cannula in the dorsal aorta. Desacetyl -alpha-MSH at 1 ng/g body weight resulted in an increase in plasma FA levels 1-3 hr after the injection, whereas the other three peptides showed no significant effect at the same dose. There was no significant change in plasma levels of cortisol after administration of any of the peptides. Lipolytic enzyme activity in the liver was significantly increased in a dose-related manner 1 hr after single intra-peritoneal injection of desacetyl-alpha-

MSH. The direct effect of desacetyl-alpha-MSH on lipolysis was examined in liver slices incubated in vitro. Lipase activity in the liver slice was stimulated in the medium containing desacetyl-alpha-MSH in a dose-related manner. The results indicate that desacetyl-alpha-MSH is a potent stimulator of lipid mobilization in the rainbow trout.

L3 ANSWER 11 OF 16 MEDLINE on STN DUPLICATE 7
ACCESSION NUMBER: 2000409830 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10865075
TITLE: Investigation of the melanocyte stimulating hormones on food intake. Lack Of evidence to support a role for the melanocortin-3-receptor.
AUTHOR: Abbott C R; Rossi M; Kim M; AlAhmed S H; Taylor G M; Ghatei M A; Smith D M; Bloom S R
CORPORATE SOURCE: ICSM Endocrine Unit, Hammersmith Hospital, W12 0NN, London, UK.
SOURCE: Brain research, (2000 Jun 30) Vol. 869, No. 1-2, pp. 203-10.
Journal code: 0045503. ISSN: 0006-8993.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200008
ENTRY DATE: Entered STN: 7 Sep 2000
Last Updated on STN: 7 Sep 2000
Entered Medline: 25 Aug 2000

AB The melanocortin receptors, melanocortin-3-receptor (MC3-R) and melanocortin-4-receptor (MC4-R), are expressed in many discrete medial hypothalamic nuclei implicated in feeding regulation. The pro-opiomelanocortin product alpha-melanocyte stimulating hormone (alpha-MSH), an MC3/4-R agonist, decreases food intake following intracerebroventricular (ICV) injection in rats. MC4-R's involvement in feeding has been established although a function for the MC3-R is unclear. We investigated endogenous melanocortin ligand binding and activation at the MC3-R and MC4-R and their effects on feeding. We have shown that alpha-MSH, desacetyl-alpha-MSH and beta-MSH bound to the MC3-R and MC4-R with similar affinity and stimulated cAMP with similar potency in HEK 293 cells transfected with MC3-R and MC4-R. In contrast gamma(2)-MSH showed selectivity for the MC3-R over the MC4-R both in binding affinity and cAMP stimulation. alpha-MSH and beta-MSH injected ICV into fasted rats at doses of 1, 3 and 6 nmol resulted in a decrease in food intake, (2 h food intake: alpha-MSH 6 nmol, 1.7+/-0.3 g; beta-MSH 6 nmol, 1.5+/-0.3 g vs. saline 6.0+/-0.5 g, P<0.001). Desacetyl alpha-MSH did not reduce food intake at low doses but was significant at 25 nmol (2 h food intake: desacetyl-alpha-MSH 6.1+/-1.0 g vs. saline 9.5+/-1.4 g, P<0.05). In contrast, gamma(2)-MSH had no effect on food intake when administered ICV to fasted rats. We were unable to establish a role for the MC3-R in feeding regulation. Our evidence, however, strengthens the hypothesis that the melanocortin's effects on food intake are mediated via the MC4-R.

L3 ANSWER 12 OF 16 MEDLINE on STN DUPLICATE 8
ACCESSION NUMBER: 96065675 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7478804
TITLE: Changes in dopaminergic control of circulating melanocyte-stimulating hormone-related peptides at puberty.
AUTHOR: Facchinetti F; Bernasconi S; Iughetti L; Genazzani A D; Ghizzoni L; Genazzani A R
CORPORATE SOURCE: Department of Obstetrics and Gynecology, University of

Modena, Italy.
SOURCE: Pediatric research, (1995 Jul) Vol. 38, No. 1, pp. 91-4.
Journal code: 0100714. ISSN: 0031-3998.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199511
ENTRY DATE: Entered STN: 24 Jan 1996
Last Updated on STN: 24 Jan 1996
Entered Medline: 30 Nov 1995

AB Desacetyl alpha-melanocyte-stimulating hormone (MSH) (ACTH 1-13) is the main form of immunoreactive alpha-MSH circulating in human plasma. This study evaluates the possibility that a dopaminergic inhibitory mechanism could be operative during human development. Thus, alpha-MSH and ACTH 1-13 plasma levels were measured after dopaminergic blockade (domperidone (0.3 mg/kg body weight, maximum 10 mg, p.o.) in 13 prepubertal (aged 4.5-12.3 y) and 12 pubertal (aged 10.2-16.9 y) children. Both peptides were measured by RIA after plasma extraction on Sep-pak C-18 cartridges and reverse phase HPLC. The chromatographic profile of alpha-MSH immunoreactivity falls into two main peaks, corresponding to the retention time of alpha-MSH and ACTH 1-13. Moreover, in prepubertal children domperidone induced a significant increase of alpha-MSH from 1.7 (median) to 5.0 pmol/L, whereas no changes in alpha-MSH plasma levels were found in pubertal subjects (from 5.0 to 4.1 pmol/L). Similarly, ACTH 1-13 plasma levels significantly increased from 3.0 to 19.8 pmol/L in prepubertal children remaining stable in pubertal ones (from 7.8 to 4.6 pmol/L). Moreover, a significant negative correlation was found between basal DHEA-S levels and the plasma alpha-MSH increase after domperidone. These data demonstrate that: 1) ACTH 1-13 is the main form of immunoreactive alpha-MSH in prepubertal life and 2) the dopaminergic inhibition of both ACTH 1-13 and alpha-MSH plasma levels is apparent only in prepubertal subjects.

L3 ANSWER 13 OF 16 MEDLINE on STN DUPLICATE 9
ACCESSION NUMBER: 2003000770 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12506415
TITLE: Melanocortins and opioids modulate early postnatal growth in rats.
AUTHOR: Mauri A; Melis M R; Deiana P; Loviselli A; Volpe A; Argiolas A
CORPORATE SOURCE: Departments of Obstetrics and Gynecology, University of Cagliari, Via Ospedale 46, I-09124 Cagliari, Italy.
SOURCE: Regulatory peptides, (1995 Sep 22) Vol. 59, No. 1, pp. 59-66.
Journal code: 8100479. ISSN: 0167-0115.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200301
ENTRY DATE: Entered STN: 2 Jan 2003
Last Updated on STN: 17 Jan 2003
Entered Medline: 16 Jan 2003

AB This study was undertaken to investigate the effects of melanocortins and opioids on rat early postnatal body and organ growth. Among melanocortins tested desacetyl-alpha-melanocyte-stimulating hormone (alpha-MSH) at dosages of 0.3 and 3 micrograms/g/day was effective in stimulating neonatal growth with a weight gain of 7 and 5.6%, respectively, after 2 weeks of treatment. Likewise, a weight rise of 4.2 and

3% was obtained with 3 micrograms/g/day of both alpha-MSH and Nle4-D-Phe7 alpha-MSH. As far as opioids were concerned, while N-acetyl-beta-endorphin (beta-End) was ineffective, the activity of beta-End was dependent on dosage. Indeed, newborns treated with 0.03 microgram/g/day showed a slight, but significant, increase in weight, whereas a marked decrease in growth followed treatment with 0.3 and, mainly, 3 micrograms/g/day, with a final weight loss of 3.4 and 5.5%, respectively. All melanocortins exerted a positive action on muscular and brain trophism and, in addition, desacetyl-alpha-MSH also induced a rise of fat deposits. On the contrary, while the 0.03 microgram/g/day beta-End dose caused an increase in muscular and brain weight, the higher dosages of the opioid were detrimental, not only for muscle and brain, but also for both liver and spleen weight. A slight, although significant ($P < 0.05$), enhancement of serum dehydroepiandrosterone sulfate (DHEAS) level was found after the injection of 0.3 microgram/g desacetyl-alpha-MSH, whereas both the 0.3 and 3 micrograms/g doses of desacetyl-alpha-MSH and the 3 micrograms/g dose of alpha-MSH determined the rise of plasma androstenedione ($P < 0.05$). All tested melanocortins and opioids failed to modify the concentrations of corticosterone. Our results suggest that melanocortins and opioids can modulate early postnatal growth in rats either by direct or indirect mechanisms.

L3 ANSWER 14 OF 16 MEDLINE on STN DUPLICATE 10
ACCESSION NUMBER: 91069410 MEDLINE
DOCUMENT NUMBER: PubMed ID: 2252541
TITLE: Alpha-melanocyte-stimulating hormone immunoreactivity in melanoma cells.
AUTHOR: Lunec J; Pieron C; Sherbet G V; Thody A J
CORPORATE SOURCE: Cancer Research Unit, Medical School, University of Newcastle-upon-Tyne, UK.
SOURCE: Pathobiology : journal of immunopathology, molecular and cellular biology, (1990) Vol. 58, No. 4, pp. 193-7. Journal code: 9007504. ISSN: 1015-2008.
PUB. COUNTRY: Switzerland
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199101
ENTRY DATE: Entered STN: 8 Mar 1991
Last Updated on STN: 3 Feb 1997
Entered Medline: 22 Jan 1991

AB Using a radioimmunoassay specific for alpha-melanocyte-stimulating hormone (alpha-MSH), significant levels of immunoreactivity were detected in a range of murine and human melanoma cell lines, including a series of ras-transfected melanocytes. The levels found in the melanoma cell lines tested varied, and overall were higher than in non-melanoma cell lines assayed for comparison. Furthermore the highest levels of immunoreactivity measured tended to be in the least differentiated and most metastatic melanoma lines. High performance liquid chromatography showed a peak of immunoreactivity which co-migrated with a desacetyl alpha-MSH standard. Additional unidentified components of immunoreactivity were found, including a high molecular weight form revealed by Sephadex-G50 gel exclusion. These may represent bound alpha-MSH or fragments of the proopiomelanocortin precursor having in common the C-terminus epitope recognised by the antibody. In view of the known effects of alpha-MSH on anchorage independent growth and metastasis of melanoma cells, our findings raise the possibility that MSH peptides may have an autocrine role in the growth and progression of melanoma. However, further characterisation of the immunoreactive species is required to determine

whether these represent biologically active forms.

L3 ANSWER 15 OF 16 MEDLINE on STN DUPLICATE 11
ACCESSION NUMBER: 86285337 MEDLINE
DOCUMENT NUMBER: PubMed ID: 3736791
TITLE: Non-ACTH components of adult human pituitary extracts which stimulate adrenal steroidogenesis.
AUTHOR: Bateman A; Dell' A; Whitehouse B J; Vinson G P
SOURCE: Neuropeptides, (1986 May-Jun) Vol. 7, No. 4, pp. 381-90.
Journal code: 8103156. ISSN: 0143-4179.
PUB. COUNTRY: SCOTLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198609
ENTRY DATE: Entered STN: 21 Mar 1990
Last Updated on STN: 21 Mar 1990
Entered Medline: 16 Sep 1986

AB Human pituitary extracts were fractionated by chromatography on Sephadex G-50 and G-25, and low molecular weight components were further separated by HPLC. Eluates were tested for their activity in stimulating steroidogenesis in suspensions of rat adrenal capsule (largely zona glomerulosa) and inner zone (fasciculata/reticularis) cells. Several biologically active components were reproducibly isolated. Three stimulated glomerulosa cells specifically, and one of these was tentatively identified by HPLC and RIA criteria as desacetyl-alpha-MSH. Alpha-MSH was not detected. One component stimulated both cell types but two others stimulated inner zone cells, and were without effect on glomerulosa cells: this type of activity has not previously been described, and is not associated with any peptide derived from pro-opiomelanocortin which has so far been tested. The data suggest that, in addition to corticotrophin, further pituitary peptides may be involved in the control of adrenocortical function.

L3 ANSWER 16 OF 16 MEDLINE on STN DUPLICATE 12
ACCESSION NUMBER: 84016062 MEDLINE
DOCUMENT NUMBER: PubMed ID: 6194532
TITLE: Neurofilaments contain alpha-melanocyte -stimulating hormone (alpha-MSH)-like immunoreactivity.
AUTHOR: Drager U C; Edwards D L; Kleinschmidt J
CONTRACT NUMBER: EY 01938 (NEI)
EY 07042 (NEI)
SOURCE: Proceedings of the National Academy of Sciences of the United States of America, (1983 Oct) Vol. 80, No. 20, pp. 6408-12.
Journal code: 7505876. ISSN: 0027-8424.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198311
ENTRY DATE: Entered STN: 19 Mar 1990
Last Updated on STN: 3 Feb 1997
Entered Medline: 23 Nov 1983

AB An antiserum to alpha-melanocyte-stimulating hormone (alpha-MSH) was found to contain antibodies to at least two types of determinants on the alpha-MSH peptide: one is present only on the free peptide, the other is shared with neurofilaments. Immunoblots from mouse brain showed the neurofilament crossreactivity to be located on proteins in the Mr 140,000

range. The neurofilament-crossreactive portion of the antiserum could be selectively absorbed out with a cytoskeletal preparation, which abolished all affinity of the antiserum to the retina but did not affect the labeling pattern in the pituitary. Absorptions with desacetyl-alpha-MSH and corticotropin seemed to indicate that the determinant shared with neurofilaments is not located at either end of the alpha-MSH peptide, but somewhere in between. The immunohistochemical labeling of the retina with the alpha-MSH antiserum was compared to the labeling with monoclonal antibodies against Mr 200,000 neurofilaments. In the adult retina the alpha-MSH-like immunoreactivity was found to be slightly more widespread; most consistently it was detectable in cell bodies of large ganglion cells, whereas the heavy neurofilament subunit was absent from somata and proximal axons of these cells. In the developing mouse brain, expression of the heavy subunit was found to lag 2-3 wk behind expression of the Mr 140,000 proteins. This confirms previous reports of a more restricted distribution and late expression of high molecular weight neurofilaments as compared to the lower subunits.

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 NEWS 16  FEB 26   IFICDB/IFIPAT/IFIUDB reloaded with enhancements
 NEWS 17  FEB 26   CAS Registry Number crossover limit increased from 10,000
                   to 300,000 in multiple databases
 NEWS 18  MAR 15   WPIDS/WPIX enhanced with new FRAGHITSTR display format
 NEWS 19  MAR 16   CASREACT coverage extended
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 NEWS 21  MAR 22   LWPI reloaded
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(desacetyl(w)alpha(w)melanocyte(w)stimulating(w)hormone or desacetyl(w)alpha(w)MSH)
L1          227 (ALPHA(W) MELANOCYTE(W) STIMULATING(W) HORMONE OR ALPHA(W) MSH)
                AND (DESACETYL(W) ALPHA(W) MELANOCYTE(W) STIMULATING(W) HORMONE
                OR DESACETYL(W) ALPHA(W) MSH)

=> s l1 and ratio
L2            9 L1 AND RATIO

=> dup rem l1
PROCESSING COMPLETED FOR L1
L3           95 DUP REM L1 (132 DUPLICATES REMOVED)

=> dup rem l2
PROCESSING COMPLETED FOR L2
L4            3 DUP REM L2 (6 DUPLICATES REMOVED)

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     FILE 'MEDLINE, EMBASE, BIOSIS, CAPLUS' ENTERED AT 15:12:04 ON 18 APR 2007
L1          227 S (ALPHA(W)MELANOCYTE(W)STIMULATING(W)HORMONE OR ALPHA(W)MSH) A
L2            9 S L1 AND RATIO
L3           95 DUP REM L1 (132 DUPLICATES REMOVED)
L4            3 DUP REM L2 (6 DUPLICATES REMOVED)

=> dis ibib abs l4 1-3

L4   ANSWER 1 OF 3  CAPLUS  COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER:         1994:596356  CAPLUS
DOCUMENT NUMBER:          121:196356
TITLE:                    Increase in desacetyl-.alpha.-
                          MSH cells in rat anterior pituitary following
                          adrenal enucleation and adrenalectomy
AUTHOR(S):                Loh, Y. Peng; Kon, Oi Lian; Pu, Le-Ping
CORPORATE SOURCE:         Laboratory of Developmental Neurobiology, National
                          Institutes of Child Health, Bethesda, MD, 20892, USA
SOURCE:                   Endocrine Journal (Basingstoke, United Kingdom)
                          (1994), 2(2), 115-21
                          CODEN: EDJUE6; ISSN: 0969-711X
DOCUMENT TYPE:            Journal
LANGUAGE:                 English
AB   RIA and immunocytochem. were used to investigate the cellular localization
     of the changes in processing of pro-opiomelanocortin (POMC) to
     immunoreactive (IR) .alpha.-MSH and IR-γ3-MSH in
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the anterior pituitary of sham-operated, adrenalectomized and adrenal enucleated rats. Fourteen days after adrenalectomy, IR-.alpha.-MSH and IR-γ3-MSH in anterior pituitary increased 2.1 and 1.8 fold resp., relative to sham-operated rats. Similarly, IR-.alpha.-MSH and IR-γ3-MSH increased 3.1 and 2.1 fold resp., fourteen days after adrenal enucleation. IR-.alpha.-MSH and IR-γ3-MSH were increased in approx. equimolar amts. with both surgical operations. Immunocytochem. using two antisera to .alpha.-MSH which distinguish authentic .alpha.-MSH from the desacetyl form identified the .alpha.-MSH in anterior pituitary to be in the desacetyl form. Immunoreactive desacetyl .alpha.-MSH was localized to a subpopulation of corticotrophs which increased in nos. after adrenalectomy or adrenal enucleation. The ratio of IR-.alpha.-MSH content/number of .alpha.-MSH immunopos. cells was constant between sham-operated, adrenalectomized and adrenal enucleated animals. The authors propose that this increase of desacetyl .alpha.-MSH expressing cells is the result of either an induction of the ACTH cleaving enzyme(s) in a larger number of corticotrophs synthesizing .alpha.-MSH, or de novo generation of more .alpha.-MSH expressing cells by cell proliferation in the anterior pituitary, following adrenal surgery.

L4 ANSWER 2 OF 3 MEDLINE on STN DUPLICATE 1
ACCESSION NUMBER: 91267449 MEDLINE
DOCUMENT NUMBER: PubMed ID: 1965835
TITLE: Plasma alpha-melanocyte-stimulating hormone during the menstrual cycle in women.
AUTHOR: Mauri A; Martellotta M C; Melis M R; Caminiti F; Serri F; Fratta W
CORPORATE SOURCE: Department of Neurosciences, University of Cagliari, Italy.
SOURCE: Hormone research, (1990) Vol. 34, No. 2, pp. 66-70. Journal code: 0366126. ISSN: 0301-0163.
PUB. COUNTRY: Switzerland
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199107
ENTRY DATE: Entered STN: 11 Aug 1991
Last Updated on STN: 11 Aug 1991
Entered Medline: 24 Jul 1991

AB alpha-Melanocyte-stimulating hormone (alpha-MSH) and adrenocorticotropin (ACTH) immunoreactivity (IR) was measured in the blood of 22 healthy women with normal ovulatory process in the early and late follicular (near to ovulation) phases and in the early luteal phase of the menstrual cycle. Plasma alpha-MSH IR ranged from undetectable values to 81.3 pg/ml, the highest levels being found in the late follicular phase (15.52 +/- 4.16 pg/ml). In contrast, plasma ACTH IR was always detectable (range: 18.5-63.2 pg/ml), but its concentration did not differ significantly between the 3 phases of the menstrual cycle. High-pressure liquid chromatography fractionation of Sep pak C18-purified alpha-MSH IR revealed in all 3 phases the presence of 3 major peaks of alpha-MSH IR, coeluting with desacetyl-alpha-MSH, alpha-MSH and diacetyl-alpha-MSH, respectively. The most abundant peak always coeluted with authentic desacetyl-alpha-MSH, and the ratio between this deacetylated and the other 2 acetylated forms was similar in the 2 follicular phases (1:1.25 and 1:1.16 in the early and late phase, respectively), but significantly different in the luteal phase (1:0.48). The fluctuations in plasma concentration of the above MSH-related peptides suggest that different rates of

alpha-MSH acetylation and release take place in the pituitary gland depending on the phase of the menstrual cycle.

L4 ANSWER 3 OF 3 MEDLINE on STN DUPLICATE 2
ACCESSION NUMBER: 85165701 MEDLINE
DOCUMENT NUMBER: PubMed ID: 6099561
TITLE: Intracellular acetylation of desacetyl alpha MSH in the Xenopus laevis neurointermediate lobe.
AUTHOR: Goldman M E; Loh Y P
CONTRACT NUMBER: 5F32MH08724 (NIMH)
SOURCE: Peptides, (1984 Nov-Dec) Vol. 5, No. 6, pp. 1129-34. Journal code: 8008690. ISSN: 0196-9781.
PUB. COUNTRY: United States
DOCUMENT TYPE: (COMPARATIVE STUDY) (IN VITRO) Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198505
ENTRY DATE: Entered STN: 20 Mar 1990 Last Updated on STN: 3 Feb 1997 Entered Medline: 15 May 1985

AB High performance liquid chromatography (HPLC) followed by radioimmunoassay (RIA) of the chromatographic fractions were used to separate and quantify, respectively, the alpha MSH-like peptides stored in the neurointermediate lobe (NIL) of the Xenopus laevis (X. laevis) pituitary gland and released from the X. laevis NIL, in vitro. Immunoreactive (IR) material eluting with a similar HPLC retention time as desacetyl alpha MSH was the major IR peptide in the NIL. Material with a retention time similar to alpha MSH and immunological properties equivalent to alpha MSH was also present in the NIL. However, the retention times of the X. laevis and mammalian alpha MSH-like peptides were not identical, suggesting species difference in these peptides. Following incubation of NILs in the presence of [3H]-acetyl CoA, the X. laevis variant of alpha MSH was the major [3H]-labeled, immunoprecipitable material present. Following an incubation of NILs in the presence of [3H]-amino acids for 21 hours, immunoprecipitable [3H]-alpha MSH was detected in the NILs and the ratio of [3H]-desacetyl alpha MSH to [3H]-alpha MSH was similar to the ratio of IR-desacetyl alpha MSH to IR-alpha MSH. The X. laevis variant of alpha MSH was the major alpha MSH-like peptide released from the NILs into the incubation medium. Dopamine (50 microM) significantly inhibited the release of IR-alpha MSH but not IR-desacetyl alpha MSH. No net increase in total alpha MSH (sum of release and NIL content) was observed in the actively secreting (control) NIL group versus the dopamine-treated group. These results indicate that acetylation of desacetyl alpha MSH occurs intracellularly.

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